

Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 17 (cancelled)

Claim 18 (new): A method which may be used for freezing a food product, said method comprising:

- a) freezing at least one surface of a product, wherein said freezing:
 - 1) comprises bringing said product into contact with a refrigerating surface;
 - 2) takes place in a treatment container; and
 - 3) results from the use of a vibrating support and a film of a cryogenic liquid placed on said support;
- b) providing a first heated temperature probe at a location immediately prior to the exit of said products from said treatment container, wherein said first temperature probe measures a temperature at its location;
- c) providing a cryogenic liquid supply system, wherein said supply system comprises a proportional valve; and
- d) providing a first data acquisition and processing unit which receives temperature information from said first temperature probe, and which can control the opening of said proportional valve.

Claim 19 (new): The method of claim 18, wherein:

- a) said vibrating support comprises a slight downward slope and ends in a slight rise;
- b) said vibrating support is capable of containing a quantity of said cryogenic liquid; and
- c) said first temperature probe is located approximately at a point where said cryogenic liquid accumulates.

Claim 20 (new): The method of claim 18, wherein said vibrating support has an upward slope.

Claim 21 (new): The method of claim 20, further comprising providing a grill, wherein:

- a) said grill is substantially located on said surface of said vibrating support; and
- b) said grill removes at least part of said cryogenic liquid from said products as said products pass over said grill.

Claim 22 (new): The method of claim 18, further comprising:

- a) providing a product temperature probe, wherein said product probe:
 - 1) is located in the passage of said products at an exit of said treatment container; and
 - 2) measures said product temperature after treatment; and
- b) providing a second data acquisition and processing unit, wherein said data acquisition and processing unit:
 - 1) receives temperature information from said product probe; and
 - 2) controls at least one member selected from the group consisting of:
 - i) the inclination slope of said support;
 - ii) the frequency of vibration of said support; and
 - iii) the opening of said proportional valve.

Claim 23 (new): The method of claim 18, further comprising:

- a) providing a safety temperature probe in said treatment container, wherein said safety probe:
 - 1) is located slightly in front of said product's exit from said container; and
 - 2) measures a temperature at its location;
- b) providing an on/off valve for said cryogenic liquid supply; and
- c) providing a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
 - 1) receives temperature information from said safety probe; and
 - 2) can control said on/off valve in order to open or close said valve.

Claim 24 (new): The method of claim 23, wherein said safety probe is a heated probe.

Claim 25 (new): The method of claim 18, wherein said cryogenic liquid comprises liquid nitrogen.

Claim 26 (new): The method of claim 24, wherein:

- a) said safety probe or said first temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

Claim 27 (new): An apparatus which may be used to freeze a product, said apparatus comprising:

- a) a treatment container for at least one product, wherein said treatment container comprises:
 - 1) a vibrating support capable of receiving a film of a cryogenic liquid;
 - 2) an inlet; and
 - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply comprises a proportional valve; and
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
 - 1) receiving temperature information from said first temperature probe; and
 - 2) controlling the opening of said proportional valve.

Claim 28 (new): The apparatus of claim 27, wherein said product comprises a food product.

Claim 29 (new): The apparatus of claim 27, wherein:

- a) said vibrating support comprises a slight downward slope and ends in a slight rise;
- b) said vibrating support is capable of containing a quantity of said cryogenic liquid; and
- c) said first temperature probe is substantially located at a point where said cryogenic liquid accumulates.

Claim 30 (new): The apparatus of claim 27, wherein said vibrating support has an upward slope.

Claim 31 (new): The apparatus of claim 30, further comprising a grill substantially located on a surface of said vibrating support, wherein said grill is capable of filtering at least part of said cryogenic liquid contained in said product as said product passes over said grill.

Claim 32 (new): The apparatus of claim 27, further comprising:

- a) a product temperature probe located near said outlet, wherein said product probe is capable of measuring a temperature of said product as it leaves said treatment unit; and
- b) a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
 - 1) receives temperature information from said product probe; and
 - 2) controls at least one member selected from the group consisting of:
 - i) the inclination slope of said support;
 - ii) the frequency of vibration of said support; and
 - iii) the opening of said proportional valve.

Claim 33 (new): The apparatus of claim 27, further comprising:

- a) an on/off valve for said cryogenic liquid supply;
- b) a safety temperature probe located near said outlet, wherein safety probe is capable of measuring a temperature at its location; and
- c) a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
 - 1) is capable of receiving temperature information from said safety probe; and
 - 2) is capable of controlling the opening or closing of said on/off valve.

Claim 34 (new): The apparatus of claim 33, wherein said safety temperature probe is a heated probe.

Claim 35 (new): The apparatus of claim 34, wherein:

- a) said safety temperature probe or said first temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.

Claim 36 (new): An apparatus which may be used to freeze a product, said apparatus comprising:

- a) a treatment container for at least one product, wherein said treatment container comprises:
 - 1) a vibrating support capable of receiving a film of a cryogenic liquid;
 - 2) an inlet; and
 - 3) an outlet;
- b) a first heated temperature probe located before said outlet, wherein said first temperature probe measures a temperature at its location;
- c) a supply system for said cryogenic liquid, wherein said supply comprises a proportional valve;
- d) a first data acquisition and processing unit, wherein said first data acquisition and processing unit is capable of:
 - 1) receiving temperature information from said first temperature probe; and
 - 2) influencing the opening of said proportional valve;
- e) a product temperature probe located near said outlet, wherein said product probe is capable of measuring a temperature of said product as it leaves said treatment unit;
- f) a second data acquisition and processing unit, wherein said second data acquisition and processing unit:
 - 1) receives temperature information from said product probe; and
 - 2) controls at least one member selected from the group consisting of:
 - i) the inclination slope of said support;
 - ii) the frequency of vibration of said support; and
 - iii) the opening of said proportional valve;
- g) an on/off valve for said cryogenic liquid supply;
- h) a safety temperature probe located near said outlet, wherein said safety probe is a heated probe capable of measuring a temperature at its location; and
- i) a third data acquisition and processing unit, wherein said third data acquisition and processing unit:
 - 1) is capable of receiving temperature information from said safety probe; and
 - 2) is capable of influencing the opening or closing of said on/off valve.

Claim 37 (new): The apparatus of claim 36, wherein:

- a) said safety temperature probe or said first temperature probe is a double probe comprising a first and a second resistor;
- b) said first resistor is connected to an instrument which measures resistance and deduces said temperature from a conversion table; and
- c) said second resistor is supplied with a voltage which generates heat.